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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shuya Hosokawa

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EXAMINER

DONADO, FRANK E

ART UNIT

PAPER NUMBER

2617

NOTIFICATION DATE

DELIVERY MODE

07/22/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/591,747	Applicant(s) HOSOKAWA ET AL.	
	Examiner FRANK DONADO	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 4/19/10 has been entered. Claims 29 and 34 have been amended. Claims 1-28 have been cancelled. Claims 35 and 36 have been added. Claims 29-36 are currently pending in this application, with claims 29 and 34 being independent.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 2617

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 29, 30, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnham, et al (**US PG Publication 2005/0163070**), in view of Rickard (**US Patent No. 5,828,293**). From now on, Farnham, et al, will be referred to as Farnham.

Regarding claims 29 and 34, Farnham teaches a communication apparatus and method for data communication with at least one terminal, and for controlling a communication timing by detecting transmission characteristics, in a transmission path to the terminal, said communication apparatus comprising: a receiver operable to receive a plurality of packets from the terminal at a plurality of transmission timings of packets within one cycle of said predetermined frequency of said power supply (**A base station comprises air interfaces for receiving information, where receptions over a first interface are scheduled accordingly so as not to interfere with receptions over second air interface due to interference from receptions over said first interface, and power levels are varied accordingly to reduce said interference, Paragraph 28, Paragraph 5, Paragraphs 7-11, Paragraph 41, lines 1-3, Paragraph 46, lines 1-6 and Paragraph 47**), and to generate information regarding a receiving condition of the received packets through said transmission path affected by said power

Art Unit: 2617

supply (**Interference measures are taken for received packets, and said power levels are varied accordingly to reduce said interference Paragraph 5 and Paragraph 6, lines 1-3 and Paragraph 7**); a detector operable to detect, based on said information regarding the receiving condition of the received packets, an interval at which an error rate is higher than a specified threshold within said one cycle of said predetermined frequency of said power supply, said interval representing a transmission path fluctuation period in which the transmission path is affected by said power supply (**An interval is detected during which a certain predetermined Quality of Service (QoS) level is not possible due to said interference, where said base station of Figure 4a uses error rate to predict receiving condition, receives packets from mobile stations at different signal levels, and said interference causes fluctuations in signal transmission, and said power levels are varied accordingly to reduce said interference, Paragraph 5, Paragraph 6, lines 1-7, Paragraph 7, Paragraph 11, Paragraph 41, lines 1-3, Paragraph 46, lines 1-6 and Paragraph 47**); and a transmission controller operable to stop data transmission during said detected interval at which the error rate is higher than the specified threshold (**Said base station suppresses or postpones a transmission by 1 transmission interval that is predicted to interfere with another transmission and adjust and assign said frequency channel accordingly so that the next transmission will not occur during the interval in which said interference is predicted to occur by said base station, Paragraph 7 and Paragraph 59, lines 1-20**). Farnham does not teach varying transmission periodically at a predetermined frequency according to an AC power

Art Unit: 2617

supply having a positive going current and a negative going current relative to a zero-crossing point of said AC power supply and stopping data transmission during said detected interval at which the error rate is higher than the specified threshold within said one cycle of said predetermined frequency of said AC power supply. Rickard teaches varying transmission periodically at a predetermined frequency according to an AC power supply having a positive going current and a negative going current relative to a zero-crossing point of said AC power supply and stopping data transmission during said detected interval at which the error rate is higher than the specified threshold within said one cycle of said predetermined frequency of said AC power supply **(A base station monitors test signals transmitted over a phase line from a subscriber station, where a quiet period is determined based on timing from said test signals, said test signals comprise alternating power and noise level that has a plurality of zero-crossing points, said quiet periods extend each side of said zero-crossing points, and said transmissions extend over each side of said zero-crossing points to ensure future transmissions occur over said quiet periods, Column 1, lines 64-67, Column 2, lines 1-4, 17-21, 32-49 and 54-67 and Column 3, lines 1-6).**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Farnham to include this feature for the benefit of transmission efficiency and service variety.

Regarding claim 30, Farnham, in view of Rickard teaches the communication apparatus as described in claim 29. Farnham further teaches said receiver is operable

Art Unit: 2617

to detect, for each of said received packets, whether or not an error exists **(An interference level is detected at a first channel, Paragraph 7, lines 5-8)**, and to generate an error signal upon detection of each error, and wherein said detector detects an error rate distribution to detect the interval at which the error rate is higher than the specified threshold **(A performance assessment function 25a within said base station passes this information to scheduler 24a to determine whether a specific QoS level can be achieved during specific time slots, Paragraph 46, lines 10-15 and Paragraph 47, lines 1-5).**

Regarding claim 33, Farnham, in view of Rickard, teaches the communication apparatus as described in claim 29. Farnham further teaches said receiver generates, upon receipt of packets from the terminal, transmission path information based on the received packets **(Interference measures over transmission channels are taken for received packets, Paragraph 6, lines 1-3 and Paragraph 7)**, and wherein said detector detects the interval at which the error rate is higher than the specified threshold based on said transmission path information **(An interval is detected during which a certain predetermined Quality of Service (QoS) level is not possible due to said interference, where said base station of Figure 4a uses error rate to predict receiving condition, and predetermined QoS levels are used to reduce delays during specific time slots and are related to signal transmissions at a predetermined frequency, Paragraph 6, lines 1-7, Paragraph 7, Paragraph 11, Paragraph 41, lines 1-3, Paragraph 46, lines 1-6 and Paragraph 47).**

Art Unit: 2617

8. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnham, in view of Rickard, and further in view of Fahim (**US Patent No. 7,042,972**).

Regarding claim 31, Farnham, in view of Rickard teaches the communication apparatus as described in claim 30. Farnham further teaches the apparatus further comprising: a periodic signal generator operable to generate a periodic signal at said predetermined frequency (**Transceivers within said base stations transmit signals during said time slot where signals are transmitted at said predetermined frequency related to said predetermined QoS level, Paragraph 29, lines 1-4, Paragraph 30, lines 1-10, Paragraph 32 and Paragraph 38, lines 9-18**), wherein said receiver is operable to receive a plurality of packets transmitted from the terminal during a plurality of cycles of said predetermined frequency (**Said base station receives a plurality of packets from said mobile terminal during a plurality of cycles at said predetermined frequency related to said predetermined QoS level, Paragraph 5**). Farnham, in view of Rickard does not teach said detector detects a phase of each of the error signals relative to said periodic signal, and detects the error rate distribution by counting the number of errors at various phases during the plurality of cycles of said predetermined frequency. Fahim teaches said detector detects a phase of each of the error signals relative to said periodic signal, and detects the error rate distribution by counting the number of errors at various phases during the plurality of cycles of said predetermined frequency (**An integrated circuit comprises a control unit that**

Art Unit: 2617

counts and detects phase errors, where said phase error information is used to correct phases of received signals, Column 2, lines 14-23, Column 15, lines 1-7, Claims 25 and 30). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Farnham, in view of Rickard to incorporate this function into the control unit of the Base Station for the benefit of added transmission efficiency.

Regarding claim 32, Farnham, in view of Rickard, and further in view of Fahim, teaches the communication apparatus as described in claim 31. Rickard further teaches said periodic signal generator detects an AC power source voltage or current and generates said periodic signal based on the detected AC voltage or AC current **(Said base station monitoring includes detection of alternating noise power and other factors needed for said determination of quiet period, Column 5, lines 15-24 and Figure 2A).**

Claim Rejections - 35 USC § 103

6. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnham, in view of Rickard, and further in view of Gilbert **(US Patent No. 7,162,235).**

Regarding claims 35 and 36, Farnham, in view of Rickard, teaches the communication apparatus and the communication method as described in claims 29 and 34, respectively. Farnham, in view of Rickard, does not teach said AC power

Art Unit: 2617

supply is a commercial AC power supply. Gilbert teaches said AC power supply is a commercial AC power supply (**A base station operates using commercial AC power standards, Column 5, lines 18-24 and 41-45**). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Farnham, in view of Rickard, to include this feature for the benefit of service variety.

Response to Arguments

9. Applicant's arguments with respect to claims 29 -36, filed 4/19/10, have been considered but are moot in view of the new ground(s) of rejection necessitated by the new limitation(s) added to claims 29 and 34 and new claims 35 and 36. See the above rejection of claims 29 and 34 for the relevant citations found in Rickard and claims 35 and 36 for the relevant citations found in Gilbert disclosing the newly added limitation(s).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2617

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK DONADO whose telephone number is (571) 270-5361. The examiner can normally be reached Monday-Friday, 9:30 am-6 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-270-6361.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-273-8300.

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Art Unit 2617

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